

BEFORE THE OFFICE OF THE COMMISSIONER OF RAILROADS

STATE OF WISCONSIN

On the Commissioner's Own Motion for a Determination of the Adequacy of Warning Devices at Two Grade Crossings of the Wisconsin Central Ltd. and the Wisconsin & Southern Railroad Co. Tracks with Slinger Road and S. Fond du Lac Drive in the Town of Polk, Washington County

9005-RX-84

FINDINGS OF FACT AND ORDER

The Commissioner of Railroads directed the staff of the Office of the Commissioner of Railroads (OCR) to investigate the adequacy of warning devices under §195.28, Stats., at the grade crossings of the Wisconsin Central Ltd. (WCL) and Wisconsin & Southern Railroad Co. (WSOR) tracks with Slinger Road (Crossing No. WCL 692 285X - WSOR 387 009G) and S. Fond du Lac Drive (Crossing No. WCL 692 278M - WSOR 387 004X) in the Town of Polk, Washington County.

Note: The Commissioner broadens the scope of this matter to include the adequacy of warning devices at the CTH 'H' (Main Street) crossing in the Village of Palmyra, Jefferson County so that the signals from the Wisconsin & Southern Railroad Co. crossing at Slinger Road can be relocated to the CTH 'H' crossing. (Crossing No. 391 577M).

This order only addresses the Slinger Road crossings in the Town of Polk. The Fond du Lac Drive crossings will be addressed separately.

An OCR investigator inspected the crossings in 2002. A DOT railroad safety engineer inspected the crossings in August 2004. No hearing was held.

Findings of Fact

THE COMMISSIONER FINDS:

Slinger Road crosses both the Wisconsin Central Ltd. and Wisconsin & Southern Railroad Co. main line tracks. The crossings are presently treated as separate crossings for the purpose of warning devices. The tracks are about 110' apart. There is about 55' of storage space between the tracks.

Slinger Road is 24' wide with 3'-wide shoulders in the vicinity of the crossing and intersects each railroad track at an angle of about 40° (left-hand forward). The crossing is located in the middle of a long curve on both tracks. The roadway approaches to the crossing are essentially level. Slinger Road carried an average daily traffic (ADT) of 706 according to a 2003 traffic count performed by Washington County at a legal speed limit of 55 mph.

The WCL operates 28 through train movements per day over the crossing at a timetable speed of 60 mph. The WSOR operates 4 to 6 train movements per day over the crossing at a timetable speed of 30 mph. Switching operations may also occur due to the nearby Ackerville Yard.

A motorist traveling at 55 mph requires a safe stopping distance of 527'. The crossing is visible from more than 600' in each direction. Assuming a train speed of 60 mph, a motorist traveling at 55 mph needs to see a train when it is 655' from the crossing from a point 527' down the highway. Assuming a train speed of 30 mph, a motorist traveling at 55 mph needs to see a train when it is 325' from the crossing from a point 527' down the highway. The sight distance available in each quadrant from the safe stopping distance is as follows: 15' northwest quadrant, 20' northeast quadrant, 20' southwest quadrant and 15' southeast quadrant. Sight distance is inadequate in all quadrants.

At all crossings, except those with gates, a driver stopped 15' short of the near rail must be able to see far enough down the track, in both directions, to determine if sufficient time exists for moving their vehicle safely across the tracks to a point 15' past the far rail, prior to the arrival of a train. Required clearing sight distance along both directions of the track, from the stopped position of the vehicle, is dependent upon the maximum train speed and the acceleration characteristics of the "design" vehicle. The necessary clearing sight distance at the Slinger Road crossing is 1345' for the WCL track and 675' for the WSOR track. The available clearing sight distance is inadequate in all four quadrants.

The exposure factor at this crossing is about 19,800 for the WCL crossing and about 4200 for the WSOR crossing. The combined exposure factor is about 24,000. The exposure factor equals the product of the number of trains per day and the number of highway vehicles per day, which yields a numerical value for the potential conflicts each day at the crossing.

No train-vehicle accidents have occurred at the Slinger Road crossings since 1973.

The Wisconsin Department of Transportation has produced a benefit-cost analysis for all at-grade crossings in the state. Installing new automatic flashing lights with gates and constant warning time circuitry at the Slinger Road crossing has a net benefit of about \$810,000 for the WCL crossing and -\$127,000 for the WSOR crossing.

Accidents that do occur here will likely be quite serious if a through train is involved due to their 60 mph speed. Train speed is strongly correlated with fatalities in train/vehicle accidents. More specifically, crossings with train speeds of 40 mph and over have a disproportionate number of fatalities. According to Federal Railroad Administration (FRA) statistics, nationally, in 1994 71% of fatalities occurred at crossings with train speeds of 40 mph+, even though only 26% of all crossings had train speeds of 40 mph+.

The WSOR crossing presently has mast-mounted 12" incandescent automatic flashing lights with motion sensors for warning devices. These signals were installed in 1999 as part of a DOT safety project. The railroad paid the 10% local match. The WCL crossing presently has 12" incandescent automatic flashing lights with motion sensors for warning devices. The existing warning devices are inadequate. The existing warning devices will be adequate until such time as the new warning devices are installed. In order to adequately protect public safety the two tracks should be treated as a single two-track crossing with 12" LED automatic flashing lights

with gates and constant warning time circuitry.

Because of the inadequate clearing sight distances both crossings must have gates. In addition, the presence of two mainline tracks, the possibility that trains could operate simultaneously on each track, and the 60-mph train speed require the installation of gates. The crossings should be treated as a single two-track because of the limited storage space (55') between the two-tracks. In addition, it is more cost-effective to install one set of automatic flashing lights and gates rather than installing a separate set at each crossing.

The WCL has expressed a reluctance to maintain the circuits on the WSOR property. The order requires the WCL to install and maintain the signals, except that the WSOR shall maintain the track circuits on its track.

The current automatic flashing lights at the WSOR can be re-used after refitting with LED lamps. The DOT recommended that these signals be moved to the CTH 'H' crossing in the Village of Palmyra, Jefferson County. CTH 'H' carries 3200 ADT and intersects the railroad track at an angle of approximately 45 degrees measured in the northeast quadrant. Highway speed is posted at 30 mph. The WSOR operates 2 through trains per day at a timetable speed of 25 mph. Warning devices consist of 8" incandescent flashing light signals of very old vintage.

The Commissioner amends the scope of this proceeding to include CTH 'H' and orders the relocation of these used signals to the CTH 'H' crossing when the new signals are installed at Slinger Road.

Constant warning time circuitry adjusts for train speed and causes the crossing signals to always operate for the same amount of time before the train reaches the crossing, regardless of train speed. A motion detector simply detects the train operation, but does not adjust for train speed so that the amount of warning time varies based on train speed.

Light emitting diodes (LED) are a relatively new application for crossing signals. The LED lamps replace the incandescent bulbs. LEDs have higher conspicuity, a wider cone of vision, and longer life than incandescent lights. LEDs are especially useful on east-west roadways where the rising and setting sun may make the signals difficult to see.

Source of funding: The signal materials and installation shall be paid from OCR safety funds.

Conclusion on the Issue

THE COMMISSIONER CONCLUDES:

1. That in order to adequately protect and promote public safety, it is necessary to install and maintain 12" LED automatic flashing lights with gates and constant warning time circuitry at the crossing of the tracks of Wisconsin & Southern Railroad Co. and Wisconsin Central Ltd. with Slinger Road in the Town of Polk, Washington County.

2. That in order to adequately protect and promote public safety, it is necessary to relocate and maintain the automatic flashing lights from the Wisconsin & Southern Railroad Co. crossing with Slinger Road to the crossing of the tracks of Wisconsin & Southern Railroad Co. with CTH 'H' (Main Street) in the Village of Palmyra, Jefferson County.

Conclusion of Law

THE COMMISSIONER CONCLUDES:

That the jurisdiction of the Office of the Commissioner of Railroads under §195.28, Stats., extends to this matter. Accordingly, the Office enters an order consistent with the findings of fact.

Order

THE COMMISSIONER ORDERS:

1. That the **Wisconsin Central Ltd.** shall install and maintain 12" LED automatic flashing lights with gates, and constant warning time circuitry with appropriate appurtenances in accordance with such plans as are filed with and approved by the Office of the Commissioner of Railroads at the crossing of its tracks and the Wisconsin & Southern Railroad Co. tracks with **Slinger Road** at-grade in the Town of Polk, Washington County by **December 31, 2005** (Crossing Nos. 692 285X and 387 009G). That the **Wisconsin & Southern Railroad Co.** shall maintain the track circuits on its property.

2. That the **Wisconsin Central Ltd.** shall submit to the Office of the Commissioner of Railroads signal and circuit plans with the cost estimate of its proposed installation and upon completion of the signal project, a detailed statement of the actual cost to the Office and to the Wisconsin Department of Transportation.

3. That the **Wisconsin & Southern Railroad Co.** shall relocate and maintain the automatic flashing lights from its Slinger Road crossing and shall refit the automatic flashing lights with 12" LED lamps and other appropriate appurtenances in accordance with such plans as are filed with and approved by the Office of the Commissioner of Railroads to the crossing of its tracks with **CTH 'H' (Main Street)** at-grade in the Village of Palmyra, Jefferson County by **December 31, 2005** (Crossing No. 391 577M).

4. That the **Wisconsin & Southern Railroad Co.** shall submit to the Office of the Commissioner of Railroads signal and circuit plans with the cost estimate of its proposed installation and upon completion of the signal project, a detailed statement of the actual cost to the Office and to the Wisconsin Department of Transportation.

5. That the signal installation work herein ordered shall not begin until the district office of the Wisconsin Department of Transportation informs the railroad that they may start such work and such start notice will not be issued until appropriate federal aid or other funding arrangements have been assured. The cost of the new project initiated before the start notice will not be reimbursed with public funds and shall be the responsibility of the railroad.

6. That neither the Wisconsin Central Ltd. nor the Wisconsin & Southern Railroad Co. shall bear any part of the cost of the crossing signals installation, except for any cost assessed to the railroads pursuant to §195.60, Stats., for the investigation of this matter by the Office. The railroads shall not pass on those assessment costs either directly or indirectly.

7. That if the petitioner, railroad or any interested party objects to this order and requests a hearing within 20 days of the date of this order in writing, the Office will hold a public hearing.

8. That jurisdiction is retained.

Dated at Madison, Wisconsin, _____.

By the Office of the Commissioner of Railroads.

Rodney W. Kreunen
Commissioner of Railroads

9005SIG84